

cited reference fails to establish a *prima facie* case of anticipation. The asserted reference fails to correspond to the claimed invention, or show all aspects claimed; therefore, the reference cannot be used to maintain the rejection under § 102(e). The Office Action fails to explain how the invention is taught by the asserted reference. Specifically, Applicant fails to see among the cited portions of the reference, *inter alia*, features completely corresponding to the claimed limitations of independent claim 1, including forming a plurality of heating elements in the die, and causing at least one of the heating elements to heat at least one adjacent portion of the die. Therefore, the cited reference fails to establish a *prima facie* case of anticipation, and Applicant requests that the § 102(e) rejection of independent claim 1, and claims 2 and 8 depending therefrom be removed.

More particularly, Applicant fails to understand how the cited portions of *Goruganthu et al.* ("forming a plurality of thermally conductive elements [*i.e.*, heat sinks] in the backside of the semiconductor device . . ." [col. 6, lines 30-33] and "Thinning removes substrate material useful for drawing heat away from the internal circuitry . . . To compensate for this material loss, a plurality of thermally conductive elements [*i.e.*, heat sinks] are formed in the backside of the semiconductor device to draw heat away from the backside of the device when the semiconductor is activated." [col. 3, lines 14-45; emphasis added]) identically teach the claimed method of forming a plurality of heating elements in the die, and causing at least one of the heating elements to heat at least one adjacent portion of the die. The cited reference appears to be directed to a completely different (*i.e.*, opposite) problem than the claimed invention.

Applicant additionally does not see how the cited portion of *Goruganthu et al.* (col. 4) identically discloses, *inter alia*, features completely corresponding to the claimed limitations of dependent claim 2, including running a test pattern on a portion of the die suspected to cause a failure. While column 4 of the cited reference discloses "testing is adapted to test the semiconductor device while the semiconductor device is activated," the cited portion does not discuss running a test pattern, or more particularly, running said test pattern on a portion of the die suspected to cause a failure.

Furthermore, the § 102(e) rejection does not even allege that *Goruganthu et al.* describes, *inter alia*, features completely corresponding to the claimed limitations of dependent claim 8, including selectively controlling the heating elements and therein causing at least one of the

heating elements to draw power in a manner that slows the operation of circuitry in at least one adjacent portion of the die. Applicant fails to see said features described in the cited portions of the *Goruganthu et al.* reference. Therefore, for all the reasons set forth above, the cited reference fails to establish a *prima facie* case of anticipation, and Applicant respectfully requests that the § 102(e) rejections of claims 1, 2 and 8 be removed.

With respect to the § 102(e) rejection of claims 22-31, Applicant respectfully traverses the § 102(e) rejection and submits that the § 102(e) rejection is improper because the cited reference fails to establish a *prima facie* case of anticipation. The asserted reference fails to correspond to the claimed invention, or show all aspects claimed; therefore, the reference cannot be used to maintain the rejection under § 102(e). Similar to the *Goruganthu et al.* reference discussed above, the *Birdsley* reference appears to be directed to a completely different (*i.e.*, opposite) problem than the claimed invention. *See, e.g.*, Abstract: "For some chips, thinning removes substrate material useful for drawing heat away from the internal circuitry when the circuitry is running at high speeds. To compensate for this material loss, a special test fixture having a heat-dissipating device [*i.e.*, a heat sink] is arranged to draw heat away from the device" (emphasis added).

The Office Action fails to explain how the invention is taught by the asserted reference. Specifically, Applicant fails to see among the cited portions of the reference, *inter alia*, features completely corresponding to the claimed limitations of independent claims 22 and 23 and claims depending therefrom, including a control means for selectively causing at least one of the heating elements to generate heat and to heat a portion of the die therefrom. Contrary to the claimed invention, the *Birdsley* reference explicitly describes a test fixture 200 as including a "heat-dissipating device (or "heat sink") 240 to draw heat from the back side of the device." *See col. 5, lines 55-63.* Such thermally conductive elements are not heating elements to generate heat and heat a portion of the die therefrom as alleged by the rejection, since drawing heat away from a semiconductor device would cool, rather than heat, the semiconductor device. Therefore, the cited reference fails to establish a *prima facie* case of anticipation, and Applicant requests that the § 102(e) rejection of independent claims 22 and 23, and claims 24-31 depending therefrom be removed.

With respect to the rejection of claims 3-7, 9-13 and 15-21 under § 103(a) as being obvious over *Goruganthu et al.* in view of *Birdsley*, Applicant submits that these rejections should be withdrawn for the reasons discussed above in connection with the §102(e) rejections. Further, each of the reference patents are assigned to Advanced Micro Devices, Inc. as indicated on the face of the respective reference patents. The present application is also assigned to Advanced Micro Devices, Inc., the assignment being recorded at the USPTO on August 25, 2000 at reel/frame 011029/0834. This assignment has been common at the time the present application was filed and for all relevant times. The present application was filed on June 2, 2000, after the changes made to 35 U.S.C. § 103(c) by the American Inventors Protection Act of 1999 (AIPA) became effective. 35 U.S.C. § 103(c) provides:

(c) Subject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f), and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

See also MPEP § 706.02(I). Applicant respectfully submits that the rejection under § 103(a) is improper because the claimed invention and the subject matter of each of the cited references were owned by or subject to an obligation of assignment to Advanced Micro Devices, Inc. Therefore, Applicant requests that the § 103(a) rejection of claims 3-7, 9-13 and 15-21 be removed.

In view of the above, Applicant submits that each of the claims is in condition for allowance. Reconsideration and withdrawal of the rejections and objection, along with a favorable response, are earnestly requested.

If appropriate, please charge charge/credit any additional, necessary fees to Deposit Account No. 50-0996 (AMDA.478PA).

Should there be any remaining issues that could be readily addressed over the telephone, the Examiner is encouraged to contact the undersigned at 651/686-6633.

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